

# International comparisons of unemployment indicators

*Seven unemployment indicators for 1989 reveal major labor market differences among North America, Europe, and Japan; Sweden and Japan have the largest increases in unemployment when part-time work for economic reasons and discouragement with the labor market are taken into account*

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For a long time now, international comparisons of labor markets have focused on the unemployment rate, which gives an important, but incomplete, indication of how well labor markets are functioning from country to country. The unemployment rate is a convenient and well-known concept; however, too exclusive a focus on this single measure may distort our view of the economies of other developed nations in comparison with that of the United States.

Thus far, the Bureau of Labor Statistics' approach to international labor market comparisons has been limited largely to analyzing unemployment rates adjusted to the usually cited U.S. concept and to providing periodic data and analysis of other labor market indicators, such as employment, employment-to-population ratios, and labor force participation rates, to help round out the picture.<sup>1</sup> International unemployment figures are regularly presented in terms of age and sex, but not according to the many other dimensions of unemployment and underemployment. Additional statistics are needed for a balanced interpretation of comparative labor market conditions.

Since 1976, the Bureau has published alternative unemployment measures for the United States known as U-1 through U-7.<sup>2</sup> The presentation of these measures recognizes that no single unemployment definition can serve all the purposes for

which such data are needed. Under this framework, U-5 is the official, usually cited, U.S. unemployment rate, while U-1 through U-4 narrow in on certain "more serious" types of unemployment, such as joblessness of long duration and persons who have lost their jobs (as opposed to new entrants and reentrants into the labor force and job leavers). U-6 and U-7 portray broader concepts of unemployment than does U-5, bringing into consideration two additional elements of underutilization of labor: persons working part time for economic reasons and discouraged workers.

This article introduces a set of measures comparable to U-1 through U-7 for eight foreign countries for 1989. The United States, Canada, Japan, five major European Community countries, and Sweden are covered. The data for Germany relate to the former West Germany only and exclude the eastern regions of the country.

A slight modification was made in the definition of U-1 to enhance international comparability. Otherwise, the framework used here is the same as that derived for U-1 through U-7 from the Current Population Survey. Data were available to calculate all of the indicators, except U-7 for Germany.

For the United States, U-1 through U-7 represents a progression from low to successively higher unemployment rates. This is not necessarily

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the case for the other countries. For instance, unemployment of long duration (U-1) is higher than unemployment due to job loss (U-2) in most of the other countries studied. In addition, the broader rates (U-6 and U-7) show important differences in international relationships that are not evident in international comparisons of the conventional measure (U-5). For example, Sweden and Japan, the countries with the lowest U-5 rates, have the largest proportionate increases in unemployment as measured by U-7. Indeed, the Japanese rate, including persons working part time for economic reasons and discouraged workers, was less than 1 percentage point below the comparably defined U.S. rate. Labor slack in Japan is reflected more in underemployment and discouragement than in actual unemployment, probably for institutional and cultural reasons.

While Sweden had a large proportionate increase of U-7 over U-5, the rate was still very low, compared with the same measure for other countries. For Sweden, where active labor market programs remove a significant number of persons from the ranks of the unemployed, a further measure beyond U-7 is needed to capture the impact of this phenomenon on the jobless rate. A section of this article presents information on the Swedish situation, because it is important to an understanding of that country's low unemployment rates.

The article presents an international comparison of U-1 through U-7 for 1989 in eight countries and for February 1990 in Japan. The year 1989 was a year of relatively low or average unemployment (for the 1980's) for most of these countries. Data for February 1989 were available for Japan, but were not used, because of unusual circumstances that took place during the survey week. (See the appendix.) Japanese unemployment was marginally lower in 1990 than in 1989. Annual average 1989 data are used for the United States, Canada, and Sweden; the figures for the European Community countries are taken from surveys conducted in the spring of that year.

The U-5 figures for Japan and the European Community countries are very close to the annual average, and therefore, the other measures can probably be viewed as good indicators for the entire year. For France and Italy, 1989 was a year of relatively high unemployment, and this affects the international rankings because of the cyclical dimension to the indicators studied. To the extent that countries are in different phases of the business cycle, the comparisons for only 1 year will be affected to some degree. However, the main relationships among the various indicators are quite similar to those in an earlier study for the year 1984, when all of the countries were in or just coming out of a recession.<sup>3</sup>

Under a program that began in the early 1960's, the Bureau has published foreign unemployment rates adjusted to U.S. concepts. This article represents an extension of the methods employed in that longstanding program. An appendix describes the data sources, methods of adjustment, and limitations associated with some of the adjustments.

### Seven indicators

The box on this page shows the definitions of the seven alternative unemployment indicators. The sequence U-1 through U-7 illustrates a range of unemployment measures, going from a very narrow to a very broad view. Other unemployment indicators could have been chosen instead. The ones included were originally chosen "because they are representative of differing bodies of opinion about the meaning and measurement of unemployment; because they are meaningful and useful measures in their own right; and because they can generally be ranked along a scale from low to high."<sup>4</sup> A short description of each indicator and the rationale behind it follows.

#### Alternative unemployment indicators

- U-1 *Long-duration unemployment rate:* Persons unemployed 13 weeks or longer, as a percent of the civilian labor force.
- U-2 *Job loser rate:* Job losers, as a percent of the civilian labor force.
- U-3 *Adult unemployment rate:* Unemployed persons aged 25 and over, as a percent of the civilian labor force aged 25 and over.
- U-4 *Full-time unemployment rate:* Unemployed full-time jobseekers, as a percent of the full-time labor force.
- U-5 *Conventional unemployment rate:* Total unemployed, as a percent of the civilian labor force.
- U-6 *Rate encompassing persons working part-time for economic reasons:* Total full-time jobseekers, plus half of the part-time jobseekers, plus half of the total number of persons working part time for economic reasons, as a percent of the civilian labor force, less half of the part-time labor force.
- U-7 *Rate adding discouraged workers:* U-6 plus discouraged workers in the numerator and denominator.

*U-1.* U-1 has been redefined slightly for comparative purposes. In the published figures pertaining to the United States, it represented persons unemployed 15 weeks or longer, as a percent of the civilian labor force. However, most other countries break their categories denoting duration of unemployment at 3 months (13 weeks), rather than 15 weeks. Because U.S. data are available (in unpublished form) for durations of a single week, these data were used to modify the U-1 measure for the United States to conform with the definition citing 13 weeks or longer as the breakpoint. This modification makes only a slight difference in the U-1 rate for the United States, increasing it from 1.1 percent to 1.2 percent in 1989.

U-1 excludes unemployment of a short-term, job-changing nature. The rationale behind U-1 is the belief that the impact of joblessness is more severe the longer it lasts, because presumably, shorter periods of unemployment can be withstood through unemployment compensation and savings.

*U-2.* The second series, U-2, is the number of persons who have lost their last jobs, as a percent of the civilian labor force. This measure focuses on experienced workers, for whom the loss of a job may lead to a significant loss of income. Unemployment resulting from reentry into the labor force, entering the labor force for the first time, and leaving a job are excluded from this series.

*U-3.* This series was originally defined as the number of heads of household that were unemployed, as a percent of all heads of household in the civilian labor force. However, the Bureau no longer publishes data in terms of heads of household, because of the increasing difficulty of identifying such a person in a household in which both husband and wife work. Consequently, U-3 has been reformulated to cover adult unemployed persons, defined as persons 25 years of age and over, as a percent of the civilian labor force in that age group. This measure is designed to focus on workers who have completed their basic education and generally have a serious commitment to the labor market.

*U-4.* U-4 is the number of unemployed persons seeking full-time jobs, as a percent of all those in the full-time labor force (including all those employed part time for economic reasons). The idea in this case is that full-time workers are more strongly attached to the labor force than are part-time workers.

*U-5.* The official, usually cited, unemployment rate represents the total number of persons not working, but available for and seeking work, as a percent of the civilian labor force. Only per-

sons on temporary layoff and persons waiting to start a new job are not required to seek work in the past 4 weeks, a necessary condition for classification as unemployed. U-5 can be viewed as the base series from which each of the other six measures is constructed, through addition or subtraction of various labor force and unemployment components.

U-5 is a consensus definition. It simply requires that, with two exceptions, jobseeking take place in the past 4 weeks. U-5 has had widespread support from various study groups and has undergone little change over the years.<sup>5</sup>

U-5 follows the general guidelines for measuring unemployment recommended by the International Labour Office. Most other countries now also follow these general guidelines, with occasional modifications for specific national circumstances. The guidelines are not specific on some points, allowing for interpretations to fit national needs. For instance, the Office recommends that jobseeking in a "specified recent period" occur for classification as unemployed. Most countries, including the United States, have set that period at 4 weeks.

*U-6.* The first of the two rates that are broader than U-5, U-6 includes the number of unemployed persons seeking full-time work, plus one-half of the number of unemployed persons seeking part-time work and one-half of the number of those involuntarily on part-time schedules for economic reasons. The denominator for this rate is the civilian labor force, less half the part-time labor force. The reasoning behind this formulation is that involuntary part-time workers should be counted as at least partially unemployed; similarly, unemployed persons seeking only part-time work should be given just half the weight of unemployed persons seeking full-time jobs, because their employed counterparts work, on average, only about half of a full workweek. This indicator moves from the activity-based concept of the labor force used in all the earlier indicators to a "time lost" type of concept.

*U-7.* The second of the two rates that are broader than U-5, U-7 is the same as U-6, except that the number of discouraged workers is added to both the numerator and denominator. Discouraged workers are defined as persons who are jobless and want work, but are not looking for work because they believe that they cannot find it. This is the broadest measure and is designed to be the most inclusive.

### **Overall results**

Table 1 shows the seven indicators for the United States and eight foreign countries for 1989 (Febru-

ary 1990 for Japan). Table 2 shows each indicator in each country in terms of its ratio to the conventional measure, U-5, in that country; this is a convenient means of comparing the various rates both within and among countries. In each table, figures are shown for both sexes, men, and women. Data were available to calculate all rates for all countries, except that U-7 could not be calculated for Germany because no data on discouraged workers were available.

Table 2 highlights some of the international differences in labor markets that are not expressed in the conventional unemployment rate. Only in the two North American countries did U-1 through U-7 represent a progression from low to successively higher unemployment rates. Only in these two countries and Sweden was the job loser measure (U-2) higher than the long-duration measure (U-1). In Italy, U-1 was higher than U-3, the measure of adult unemployment, while in France, U-1 and U-3 were identical. In Japan, Germany, and the Netherlands, U-3 was higher than U-4, the full-time unemployment rate, and in France, Italy, and

the United Kingdom, U-4 was higher than the conventional unemployment rate, U-5. In Sweden, U-4 and U-5 were identical. Most of these relationships were also observed in the 1984 study.

Sweden had, by far, the largest proportionate increases in unemployment, as measured by U-6. The Swedish rate was more than double the U-5 rate, whereas the increases for the other countries were much smaller. For example, the U-6 rate was 36 percent higher than the U-5 rate in the United States and was only 3 percent higher in Germany. Japan had the largest proportionate increase from U-6 to U-7.

Chart 1 illustrates the increase from the conventional rate to the most comprehensive rate, U-7, in eight of the countries studied (excluding Germany). In Sweden, U-7 was almost triple U-5, although it was still low in comparison with U-7 in other countries. Japan's U-7 rate was more than three times the U-5 rate, but Japan still ranked second lowest among the countries studied. However, the Japanese U-7 rate drew much closer to the U.S. rate.

Table 1. Alternative unemployment indicators, U-1 to U-7, nine countries, 1989<sup>1</sup>

[In percent]

Indicator	United States	Canada	Japan	Sweden	European Community				
					France	Germany	Italy	Netherlands	United Kingdom
<b>Both sexes</b>									
U-1 .....	1.2	3.1	1.1	0.5	8.1	4.6	7.3	6.9	5.2
U-2 .....	2.4	3.9	.4	.7	4.1	1.7	.6	1.1	1.5
U-3 .....	4.0	6.6	1.7	1.0	8.1	5.8	4.3	7.6	6.6
U-4 .....	4.9	7.4	1.6	1.4	10.4	5.3	8.0	6.9	8.0
U-5 .....	5.3	7.5	2.2	1.4	9.7	5.8	7.8	8.8	7.4
U-6 .....	7.2	9.5	2.8	3.4	10.9	6.0	10.0	11.8	8.7
U-7 .....	7.9	9.9	<sup>2</sup> 7.2	3.8	11.1	( <sup>3</sup> )	15.8	12.6	9.3
<b>Men</b>									
U-1 .....	1.4	3.1	1.1	.6	6.0	3.7	5.1	5.5	5.9
U-2 .....	2.9	4.4	.5	.6	3.6	1.6	.6	1.2	2.0
U-3 .....	3.9	6.1	1.3	1.0	6.1	4.5	2.9	5.7	6.7
U-4 .....	4.8	7.0	1.6	1.3	7.9	4.6	5.5	6.4	7.9
U-5 .....	5.2	7.3	1.9	1.4	7.4	4.6	5.4	6.9	7.7
U-6 .....	6.8	8.2	2.2	2.1	8.1	4.8	7.1	8.2	8.3
U-7 .....	7.3	8.6	<sup>2</sup> 3.8	2.4	8.1	( <sup>3</sup> )	10.0	8.5	8.8
<b>Women</b>									
U-1 .....	1.0	3.1	1.2	.5	10.7	6.0	11.4	9.0	4.4
U-2 .....	1.8	3.2	.2	.7	4.8	1.9	.6	1.1	.9
U-3 .....	4.2	7.3	2.0	1.1	10.6	7.9	7.0	11.1	6.5
U-4 .....	5.1	7.9	1.7	1.4	14.5	6.8	13.2	7.9	8.1
U-5 .....	5.4	7.9	2.8	1.5	12.6	7.5	12.0	11.9	7.1
U-6 .....	7.9	11.1	3.7	5.1	14.9	8.2	15.8	19.1	9.4
U-7 .....	8.7	11.7	<sup>2</sup> 12.3	5.6	15.3	( <sup>3</sup> )	26.1	20.7	9.9

<sup>1</sup> February 1990 for Japan.

<sup>2</sup> Midpoint of range of estimates.

<sup>3</sup> Not available.

NOTE: U-1, long-term unemployment rate; U-2, job loser rate; U-3, adult unemployment rate; U-4, full-time unemployment rate; U-5, conventional

measure; U-6, rate encompassing persons working part time for economic reasons; U-7, U-6 plus discouraged workers. (See box on page 4.)

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country.

Table 2. **Alternative unemployment indicators as a ratio of the conventional measure (U-5), nine countries, 1989<sup>1</sup>**

[U5 = 100]

Indicator	United States	Canada	Japan	Sweden	European Community				
					France	Germany	Italy	Netherlands	United Kingdom
<b>Both sexes</b>									
U-1 .....	23	41	50	36	84	79	94	78	70
U-2 .....	45	52	18	50	42	29	8	13	20
U-3 .....	75	88	77	71	84	100	55	86	89
U-4 .....	92	99	73	100	107	91	103	78	108
U-5 .....	100	100	100	100	100	100	100	100	100
U-6 .....	136	127	127	243	112	103	128	134	118
U-7 .....	149	132	<sup>2</sup> 327	271	114	<sup>3</sup>	203	143	126
<b>Men</b>									
U-1 .....	27	42	58	43	81	80	94	80	77
U-2 .....	56	60	26	43	49	35	11	17	26
U-3 .....	75	84	68	71	82	98	54	83	87
U-4 .....	92	96	84	93	107	100	102	93	103
U-5 .....	100	100	100	100	100	100	100	100	100
U-6 .....	131	112	116	150	109	104	131	119	108
U-7 .....	140	118	<sup>2</sup> 200	171	109	<sup>3</sup>	185	123	114
<b>Women</b>									
U-1 .....	19	39	43	33	85	80	95	76	62
U-2 .....	33	41	7	47	38	25	5	9	13
U-3 .....	78	92	71	73	84	105	58	93	92
U-4 .....	94	100	61	93	115	91	110	66	114
U-5 .....	100	100	100	100	100	100	100	100	100
U-6 .....	146	141	132	340	118	109	132	161	132
U-7 .....	161	148	<sup>2</sup> 439	373	121	<sup>3</sup>	218	174	139

<sup>1</sup> February 1990 for Japan.

<sup>2</sup> Midpoint of range of estimates.

<sup>3</sup> Not available.

unemployment rate; U-4, full-time unemployment rate; U-5, conventional measure; U-6, rate encompassing persons working part time for economic reasons; U-7, U-6 plus discouraged workers. (See box on page 4.)

NOTE: U-1, long-term unemployment rate; U-2, job loser rate; U-3, adult

SOURCE: Table 1.

Italy also experienced a large increase in its U-7 rate, but the rise was not as great as the increase in U-7 for Japan or Sweden, because Italy's U-5 rate was much higher than Japan's and Sweden's. In Italy, U-7 was twice as high as the conventional rate and ranked highest among the countries studied.

With some differences in degree, the foregoing relationships held for both men and women. (See table 2.) For the narrower indicators, U-1 through U-4, the differences between the rates for men and women in relation to U-5 were not large. Women tended to have lower U-1 rates, compared with U-5, than did men in those countries that were not members of the European Community. Within the Community, except for the United Kingdom, the differences between U-1 and U-5 were about the same for men as for women. In all of the countries studied except Sweden, the job loser rate (U-2) was more favorable for women than for men, compared with U-5. With few exceptions, adult unemployment (U-3) and full-time unemployment (U-4) rates had similar relation-

ships to U-5 for both men and women.

In every country studied, unemployment, as measured by U-6 and U-7, increased to a greater extent for women than it did for men, and in Sweden and Japan in particular, the difference was very large. (See table 2.) In Sweden, the U-7 rate increased nearly twofold for men, but almost fourfold for women, over the U-5 rate. In Japan, U-7 for men was double their U-5 rate, but for women, it was more than 4 times as great as U-5.

Table 3 ranks the nine countries examined in terms of each of the seven indicators, from lowest (best) to highest (worst). Sweden's labor market outperformed the others with regard to every indicator except for U-2, the job loser rate, where Japan and Italy barely displaced Sweden with the lowest rates, and U-6, where Japan also outranked Sweden.

The United States ranked from second to fourth best in every indicator except job losers (U-2). At 2.4 percent of the civilian labor force, this rate was relatively high. Only Canada's and France's U-2 rates were higher.

France had the highest rates for U-1 through U-5. This was partly because 1989 was a year of high unemployment in France, but a year of low or average unemployment in most of the other countries studied. In the 1984 investigation, France typically placed in the middle of the ranking for each indicator. The Netherlands had the highest U-6 rate, while Italy had, by far, the highest U-7 rate.

The rankings changed somewhat by sex. (See table 3.) The most significant change was for Japanese women, who experienced a very large increase in their U-7 rate. Ranking best among all the countries studied in their figure for U-6, Japanese women fell behind women in four other countries when discouraged workers were added.

Canadian men displaced French men with the highest U-2 rate, and British men had higher U-3 and U-5 rates than did French men. Italian women had the highest incidence of long-duration unemployment (U-1), whereas the rate for Italian men was toward the middle of the rankings. Dutch women had the highest rates of adult unemployment (U-3) and also the highest rate including persons who worked part time for economic reasons (U-6).

The following sections of this article take a more in-depth look at each of the seven indicators and the reasons behind the international differences noted. The discussion begins with U-5, because it is the rate from which all of the others are derived.

#### Conventional measure (U-5)

Among the countries studied, Sweden and Japan had the lowest unemployment rates (between 1 and 3 percent), in terms of persons who were without work, seeking work, and currently available for work. The United States placed in the next tier of the range, along with Germany, with a rate between 5 and 6 percent. Canada, Italy, and the United Kingdom followed, with rates between 7 and 8 percent. The Netherlands recorded a rate of almost 9 percent, while France was at the high end of the spectrum, with a jobless rate of 9.7 percent.

Compared with the average for the 1980's, the year 1989 was one of exceptionally low unemployment for the United States, Sweden, and the United Kingdom. That year, the official U.S. jobless rate stood at 5.3 percent, while the average for the decade was 2 percentage points higher. Canada and the Netherlands had somewhat lower unemployment rates in 1989, compared with their averages for the decade, but the differences were small. Japan's February 1990 rate used in these comparisons was a bit below that country's 1980's average. For Germany, the 1989 unemployment rate was virtually the same as the average for the decade, while in France and Italy, unemployment

in 1989 was above their averages for the 1980's. The following tabulation presents the 1989 U-5 rate (February 1990 for Japan) and the average U-5 rate for the decade for each of the countries studied, with the ranking of each country in parentheses after each rate (for Sweden, Germany, Italy, and the Netherlands, the average for the 1980's is an estimated annual average, adjusted for breaks in the series):

	1989		Average for 1980's	
United States . . . . .	5.3	(3)	7.3	(5)
Canada . . . . .	7.5	(6)	7.8	(6)
Japan . . . . .	2.2	(2)	2.5	(2)
Sweden . . . . .	1.4	(1)	2.1	(1)
European Community:				
France . . . . .	9.7	(9)	9.2	(7)
Germany . . . . .	5.8	(4)	5.8	(3)
Italy . . . . .	7.8	(7)	7.0	(4)
Netherlands . . . . .	8.8	(8)	9.9	(8)
United Kingdom . . . . .	7.4	(5)	10.1	(9)

Four countries—Canada, Japan, Sweden, and the Netherlands—ranked the same in 1989 as they did for the entire decade, and Germany's 1989 ranking was only slightly changed from its decade-long average. The United States and the United Kingdom had improved rankings in 1989 over their average for the decade. The United Kingdom had the highest U-5 rate, on average, for the 1980's, while France and Italy fared worse under the 1989 rankings than they did for the decade.

International differences in unemployment rates, as conventionally defined, have been addressed in numerous studies. In a 1978 bulletin, the Bureau found explanations for these differences in such factors as cyclical trends, labor force growth and composition, labor migrations, seasonality, income maintenance arrangements (for example, unemployment insurance), labor market programs, the transition from school to work, and legal, cultural, and social considerations.<sup>6</sup>

#### Long-duration unemployment (U-1)

Long-duration unemployment was much more prevalent in the European Community countries than in Sweden and the non-European countries studied. The situation persisted throughout the 1980's in the European Community countries, while in North America and Sweden, the incidence of such unemployment remained relatively low. In the five European Community countries, U-1, unemployment of 3 months or longer, was higher than U-2, the job loser rate. This was also the case in Japan, but there, both rates were very low in comparison with Europe.

In contrast, U-1 was significantly lower than U-2 in the United States and Canada and slightly lower in Sweden.

The following tabulation shows U-1 (13 weeks or over), along with two additional measures of unemployment duration: unemployment rates for durations of 6 months or longer and 1 year or longer.

	13 weeks or over	6 months or over	12 months or over
United States . . .	1.2	0.5	0.3
Canada . . . . .	3.1	1.6	.6
Japan . . . . .	1.1	.8	.3
Sweden . . . . .	.5	.3	.1
European Community:			
France . . . . .	8.1	6.6	4.7
Germany . . . . .	4.6	3.8	2.8
Italy . . . . .	7.3	6.7	5.6
Netherlands . . . .	6.9	5.7	4.3
United Kingdom	5.2	4.2	3.0

At the two much longer durations, unemployment virtually disappeared in the United States and the other non-European Community countries, but it remained fairly visible in the five European Community nations, particularly in France, the Netherlands, and Italy. It is noteworthy that, although the conventional unemployment rate, U-5, was significantly higher in the United States than in Japan, the latter country had proportionally more of its labor force unemployed 6 months or longer.

North American workers tend to move into and out of employment and unemployment, whereas European joblessness tends to reflect a much larger group of long-term unemployed. In North America, most people have relatively short spells of unemployment, frequently interspersed with periods of employment or of inactive labor force status. In fact, if we compare the group of people who were unemployed in a given month with the

Table 3. **Rankings of nine countries from lowest to highest rate in 1989, by alternative unemployment indicators<sup>1</sup>**

Rank	U-1	U-2	U-3	U-4	U-5	U-6	U-7
<b>Both sexes</b>							
1 . . . . .	Sweden 0.5	Japan 0.4	Sweden 1.0	Sweden 1.4	Sweden 1.4	Japan 2.8	Sweden 3.8
2 . . . . .	Japan 1.1	Italy .6	Japan 1.7	Japan 1.6	Japan 2.2	Sweden 3.4	Japan 7.2
3 . . . . .	U.S. 1.2	Sweden .7	U.S. 4.0	U.S. 4.9	U.S. 5.3	Germany 6.0	U.S. 7.9
4 . . . . .	Canada 3.1	Netherlands 1.1	Italy 4.3	Germany 5.3	Germany 5.8	U.S. 7.2	U.K. 9.3
5 . . . . .	Germany 4.6	U.K. 1.5	Germany 5.8	Netherlands 6.9	U.K. 7.4	U.K. 8.7	Canada 9.9
6 . . . . .	U.K. 5.2	Germany 1.7	Canada <sup>2</sup> 6.6	Canada 7.4	Canada 7.5	Canada 9.5	France 11.1
7 . . . . .	Netherlands 6.9	U.S. 2.4	U.K. <sup>2</sup> 6.6	Italy <sup>2</sup> 8.0	Italy 7.8	Italy 10.0	Netherlands 12.6
8 . . . . .	Italy 7.3	Canada 3.9	Netherlands 7.6	U.K. <sup>2</sup> 8.0	Netherlands 8.8	France 10.9	Italy 15.8
9 . . . . .	France 8.1	France 4.1	France 8.1	France 10.4	France 9.7	Netherlands 11.8	— —
<b>Men</b>							
1 . . . . .	Sweden .6	Japan .5	Sweden 1.0	Sweden 1.3	Sweden 1.4	Sweden 2.1	Sweden 2.4
2 . . . . .	Japan 1.1	Sweden <sup>2</sup> .6	Japan 1.3	Japan 1.6	Japan 1.9	Japan 2.2	Japan 3.8
3 . . . . .	U.S. 1.4	Italy <sup>2</sup> .6	Italy 2.9	Germany 4.6	Germany 4.6	Germany 4.8	U.S. 7.3
4 . . . . .	Canada 3.1	Netherlands 1.2	U.S. 3.9	U.S. 4.8	U.S. 5.2	U.S. 6.8	France 8.1
5 . . . . .	Germany 3.7	Germany 1.6	Germany 4.5	Italy 5.5	Italy 5.4	Italy 7.1	Netherlands 8.5
6 . . . . .	Italy 5.1	U.K. 2.0	Netherlands 5.7	Netherlands 6.4	Netherlands 6.9	France 8.1	Canada 8.6
7 . . . . .	Netherlands 5.5	U.S. 2.9	Canada <sup>2</sup> 6.1	Canada 7.0	Canada 7.3	Canada <sup>2</sup> 8.2	U.K. 8.8
8 . . . . .	U.K. 5.9	France 3.6	France <sup>2</sup> 6.1	U.K. <sup>2</sup> 7.9	France 7.4	Netherlands <sup>2</sup> 8.2	Italy 10.0
9 . . . . .	France 6.0	Canada 4.4	U.K. 6.7	France <sup>2</sup> 7.9	U.K. 7.7	U.K. 8.3	— —
<b>Women</b>							
1 . . . . .	Sweden .5	Japan .2	Sweden 1.1	Sweden 1.4	Sweden 1.5	Japan 3.7	Sweden 5.6
2 . . . . .	U.S. 1.0	Italy .6	Japan 2.0	Japan 1.7	Japan 2.8	Sweden 5.1	U.S. 8.7
3 . . . . .	Japan 1.2	Sweden .7	U.S. 4.2	U.S. 5.1	U.S. 5.4	U.S. 7.9	U.K. 9.9
4 . . . . .	Canada 3.1	U.K. .9	U.K. 6.5	Germany 6.8	U.K. 7.1	Germany 8.2	Canada 11.7
5 . . . . .	U.K. 4.4	Netherlands 1.1	Italy 7.0	Canada <sup>2</sup> 7.9	Germany 7.5	U.K. 9.4	Japan 12.3
6 . . . . .	Germany 6.0	U.S. 1.8	Canada 7.3	Netherlands <sup>2</sup> 7.9	Canada 7.9	Canada 11.1	France 15.3
7 . . . . .	Netherlands 9.0	Germany 1.9	Germany 7.9	U.K. 8.1	Netherlands 11.9	France 14.9	Netherlands 20.7
8 . . . . .	France 10.7	Canada 3.2	France 10.6	Italy 13.2	Italy 12.0	Italy 15.8	Italy 26.1
9 . . . . .	Italy 11.4	France 4.8	Netherlands 11.1	France 14.5	France 12.6	Netherlands 19.1	— —

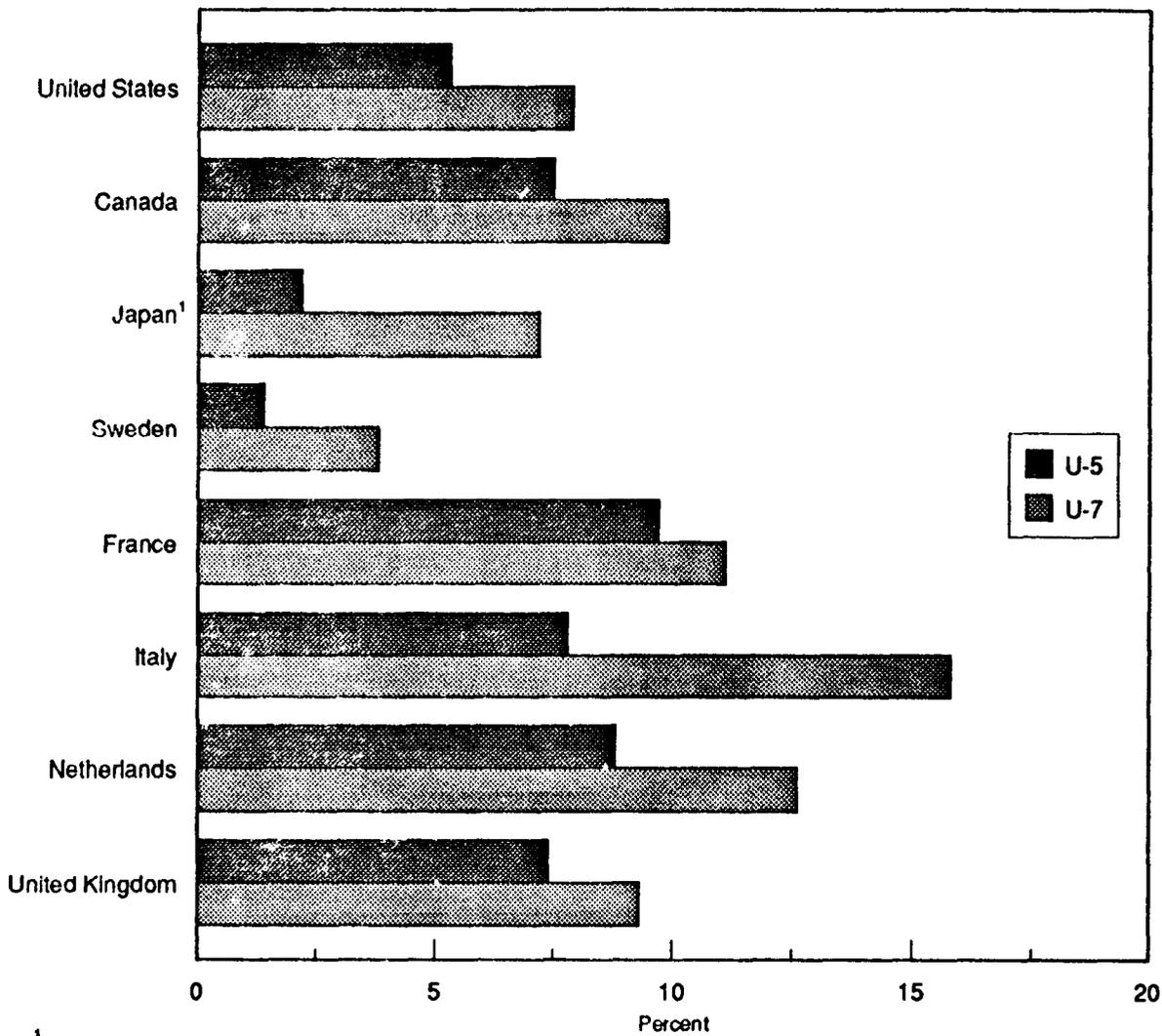
<sup>1</sup> February 1990 for Japan.

<sup>2</sup> Tied in rank.

NOTE: U.S. = United States; U.K. = United Kingdom. Dash indicates no data available to rank Germany.

SOURCE: Table 1.

Chart 1. Comparison of U-5 and U-7 unemployment indicators, by country, 1989



<sup>1</sup> February 1990 data.

NOTE: U-5 is conventional unemployment rate. U-7 is unemployment rate encompassing persons working part time for economic reasons and discouraged workers.

group unemployed in the following month, we find that, during normal times in the United States, only about half are still unemployed, a quarter have found jobs, and the remaining quarter have left the labor force entirely. By contrast, European countries have much lower levels of labor market flows than does North America.<sup>7</sup> These differences in labor market dynamics show up in the comparative data on duration of unemployment.

High levels of unemployment benefits payable for long periods of time allow workers to remain

unemployed longer while seeking work. European Community countries have more generous benefit systems than most other countries. However, the degree to which these systems influence unemployment duration is unclear, due to difficulties in measuring the phenomenon both within and across countries.

Many unemployed people are not eligible for benefits at all or are not eligible up to the maximum duration, because they have an insufficient employment record. Further, it is difficult to

choose an appropriate measure of the generosity of benefits, as benefits can vary with time and family situations. A study by the Organisation for Economic Co-operation and Development using summary indicators that take some account of these complicating factors found some positive, but weak, correlation between benefit replacement rates over the long term and the incidence of long-duration unemployment.<sup>8</sup>

Long-duration unemployment feeds on itself, eventually becoming a "long-term unemployment trap."<sup>9</sup> In other words, the average rate at which people leave unemployment to become employed tends to decrease with the duration of the unemployment spell. For example, in France, 48 percent of persons unemployed between 12 and 18 months, but only 22 percent of persons unemployed for more than 3 years, found a job within the 18 months after a survey that took place in November 1986.<sup>10</sup> It is often suggested that such declines reflect a loss of employment-related skills, as well as discrimination against long-term unemployed persons by employers.

Sweden has an extensive system of labor market programs to assist the unemployed. Employment Office personnel are instructed to put pressure on unemployed persons to avail themselves actively of job opportunities or labor market training. As a result, in many cases, they become employed or leave the labor force to take training before their duration of unemployment becomes lengthy.<sup>11</sup> Thus, unemployment, which is low anyway in Sweden, becomes virtually nil at durations of 6 months or longer.

### Job losers (U-2)

Unemployed persons can be classified into four categories based on their former employment status: job losers, job leavers, new entrants into the labor force, and reentrants into the labor force. Table 4 shows each of these four groups as a percent of the civilian labor force. U-2 focuses on job losers.

U-2 rates were relatively low in Europe and Japan, compared with North America. This reflects the greater level of job security and protection for regular workers in Europe and Japan. Italy was an extreme case, with virtually no job loser unemployment, but a very high proportion of unemployment associated with new entrants into the labor market. Among the European Community countries studied, only France had a pattern similar to North America's, with job losers bearing the brunt of unemployment among the four categories listed. But it should be noted that 1989 was a year of high unemployment in France, and job losses are highly cyclical. The discussion below of U-6, the measure that includes those employed only

part time for economic reasons, presents some information on the nature of employment in Europe, whereby regular workers are shielded from unemployment, while workers on temporary, fixed-contract, or other nonstandard jobs are the job losers.

Among the four groups categorized by former employment status, job losers made up the highest proportion of the labor force in the United States and Canada. They were also the most significant among the jobless in Sweden, where all unemployment rates were very low. By contrast, job leavers were the largest category in Germany. Rounding out the picture, new entrants in Italy and reentrants in the Netherlands and the United Kingdom constituted the highest proportions of the jobless in the labor force in those countries.

### Adult unemployment (U-3)

Adult unemployment, as reflected in U-3, was lower than youth unemployment in every country studied except Germany, where a strong apprenticeship system shields many youth from unemployment. In all of the other countries, there was a significant youth-adult differential, as shown in the following tabulation:

	Youth rate	Adult rate	Ratio, youth to adult
United States . . . . .	10.9	4.0	2.7
Canada . . . . .	11.3	6.6	1.7
Japan . . . . .	6.4	1.7	3.8
Sweden . . . . .	3.7	1.0	3.7
European Community:			
France . . . . .	19.7	8.1	2.4
Germany . . . . .	5.7	5.8	1.0
Italy . . . . .	25.4	4.3	5.9
Netherlands . . . . .	13.5	7.6	1.8
United Kingdom . . . . .	10.4	6.6	1.6

Because of the low youth-adult unemployment differential in Germany, that country's U-3 and U-5 unemployment rates were virtually identical, whereas in all the other countries studied, U-3 was significantly lower than the official U-5 rate. (See table 2.) Italy's U-3 measure was particularly low, because youth unemployment there was about 6 times higher than adult unemployment. Indeed, virtually all of Italian unemployment is among persons under age 25, a phenomenon related to the job loser-new entrant difference for Italy. New entrants into the labor force tend to be young persons, and adults with established jobs tend to be shielded from unemployment in Italy, although they may be subject to underemployment in the form of reduced hours. (See the discussion of U-6 below.)

Table 4. **Unemployment rates by former status, 1989<sup>1</sup>**

[Percent of civilian labor force]

Country	Job losers	Job leavers	New entrants	Reentrants
United States	2.4	0.8	0.5	1.5
Canada . . . . .	3.9	1.6	.2	1.9
Japan . . . . .	.4	.8	( <sup>2</sup> )	( <sup>2</sup> )
Sweden . . . . .	.7	.2	.2	.3
<b>European Community</b>				
France . . . . .	4.1	2.0	1.0	2.6
Germany . . . . .	1.7	2.0	.4	1.6
Italy . . . . .	.6	.1	5.4	1.6
Netherlands . . . . .	1.1	2.3	1.5	3.8
United Kingdom . . . . .	1.5	2.4	.6	2.9

<sup>1</sup> February 1990 for Japan.<sup>2</sup> Not available separately; combined rate for new entrants and reentrants is 1 percent.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country.

**Full-time jobseekers (U-4)**

Unemployment was lower for full-time workers than for part-time workers in the United States, Canada, Japan, Sweden, the Netherlands, and Germany. The situation was reversed in France, however, where full-time workers bore the brunt of unemployment. In Italy and the United Kingdom, jobless rates were also higher for full-time workers, but the differentials were not as large. The following tabulation shows the full-time and part-time unemployment rates, as well as the ratio of part-time to full-time unemployment, for each of the countries studied:

	Unemployment rate		Part-time to full-time ratio
	Full time	Part time	
United States . . . . .	4.9	7.3	1.5
Canada . . . . .	7.4	8.5	1.1
Japan . . . . .	1.6	10.3	6.4
Sweden . . . . .	1.4	1.7	1.2
<b>European Community:</b>			
France . . . . .	10.4	6.5	.6
Germany . . . . .	5.3	8.6	1.6
Italy . . . . .	8.0	6.2	.8
Netherlands . . . . .	6.9	13.5	2.0
United Kingdom . . . . .	8.0	6.0	.8

Full-time work was most prevalent in Italy, where 9 of 10 workers were so employed. It was least prevalent in the Netherlands, where about 7 of 10 were employed at full-time jobs. This high representation of the part-time employment sector, combined with the relatively high part-time

jobless rate, in the Netherlands explains why the Dutch full-time unemployment rate (U-4) was so much lower than the conventional U-5 rate.

The differential between these two rates was higher in Japan than in any other country, with the unemployment rate for part-time workers 6 times the rate for full-time workers. This reflects the fact that full-time, regular workers in Japan are generally shielded from unemployment by the "lifetime employment" system there, while part-time workers provide flexibility to employers.

During the period since 1979, full-time jobs have lost ground in their share of total employment in all countries studied except Sweden. Based on data compiled by the Organisation for Economic Co-operation and Development for the period 1979 to 1990, the largest decrease occurred in the Netherlands, where the proportion of full-time workers in total employment fell by 16 percentage points, from 83 percent to 67 percent. Full-time workers in Canada and the United Kingdom lost 5 percentage points in share of employment, and lesser declines occurred in the other countries. In the United States and Italy, the decrease in share was marginal (less than 1 percentage point).<sup>12</sup>

**Accounting for part-time workers (U-6)**

To obtain U-6, the unemployed under the definition of U-5 are adjusted to include only half of those seeking part-time jobs. Then, subject to the modification noted below, half of all persons working part time for economic reasons are added to the numbers of the newly determined unemployed. The resulting figure is divided by the civilian labor force less half of the part-time labor force.

Thus, U-6 brings into consideration persons working part time for economic reasons. This category includes a variety of workers: persons working reduced hours for economic reasons (for example, slack work, shortages of materials, or a plant breakdown), persons who could find only part-time positions, and persons who lost hours because they started or ended a job in the survey week.

For all countries except the United States and Canada, the Bureau has added another group to the economic part-time category: persons on lay-off the entire survey week who were waiting to return to their jobs. Such persons are already counted in the unemployment figures (U-5) in the United States and Canada. However, in Europe and Japan, because they are employed under work contracts and often remain on the payroll, they are classified as employed. Therefore, in BLS comparisons of U-5 across countries, strict application of the U.S. definition is not made regarding this point.<sup>13</sup> For Europe and Ja-

pan, persons on layoff the entire week have been added to U-6, rather than U-5. Because they worked no hours at all during the week, they are given full weight instead of half weight in the calculation of U-6. Except for Italy, the numbers of such persons were very small.

Table 5 shows a breakdown of the category of those working part time for economic reasons into subcategories and indicates the total of all persons in these subcategories, for comparison with the conventional unemployment figure for each country. Working part time for economic reasons was proportionally highest in Sweden, accounting for about 70 percent of the sum of the unemployed and those working part time for economic reasons. In the United States and Japan, the proportion was approximately 43 percent. The Netherlands had a similar proportion. However, the other European Community countries had lower proportions than did those countries outside the Community; the figures varied from about 13 percent in Germany and France to 30 percent in Italy.

Because of these differences, the U.S. U-6 rate increased more in relation to U-5 than the similarly defined rates for the European Community countries. In the Community, only the Nether-

lands and Italy approached the magnitude of increase recorded by the United States in this regard. France and the United Kingdom had much smaller increases from U-5 to U-6, and Germany's rate hardly increased at all. (See table 2.) On the other hand, Sweden's U-6 rate was greatly increased over U-5, as labor slack was channeled much more into underemployment than into unemployment.

In the European Community countries, particularly France, the employment situation was improving in the spring of 1989. Thus, employers were increasing the hours of their workers, and fewer were working part time for economic reasons than did the year before. This partly explains the smaller increases in U-6 over U-5 for these countries. If a different year had been chosen for the analysis, U-6 might have shown a somewhat greater increase over U-5. Similarly, Japan's February 1990 U-6 figure of 2.8 percent was lower than in some of the years in the 1980's.

In Western Europe and Japan, employers have traditionally tried to maintain their work forces by making use of "short-time schedules," whereby hours at work are reduced, to spread available jobs among a larger number of persons. Legal re-

Table 5. Part-time workers for economic reasons, nine countries, 1989<sup>1</sup>

[Numbers in thousands]

Category	United States	Canada	Japan	Sweden	European Community				
					France	Germany	Italy	Netherlands	United Kingdom
Total working part time for economic reasons . . . . .	4,893	506	970	153	381	247	739	417	503
Reasons for working part time:									
Reduced hours <sup>2</sup> . . . . .	2,360	86	240	17	21	15	110	16	30
Zero hours . . . . .	0	0	40	11	11	5	188	11	18
Could find only part-time work <sup>3</sup> . . . . .	2,233	420	690	125	321	215	430	386	407
Job starts and stops <sup>4</sup> . . . . .	300	0	0	0	28	12	11	4	48
Total U-5 unemployed . . . . .	6,528	1,018	1,360	66	2,316	1,658	1,752	579	2,126
Total working part time for economic reasons and unemployed . . . . .	11,421	1,524	2,330	219	2,697	1,905	2,491	996	2,629
Percent working part time for economic reasons . . . . .	42.8	33.2	41.6	69.9	14.1	13.0	29.7	41.9	19.1
Percent unemployed . . . . .	57.2	66.8	58.4	30.1	85.9	87.0	70.3	58.1	80.9
Civilian labor force . . . . .	123,869	13,503	60,950	4,604	23,810	28,747	22,561	6,564	28,608
Percent of labor force:									
Working part time for economic reasons . . . . .	4.0	3.7	1.6	3.3	1.6	0.9	3.3	6.4	1.8
Percent unemployed . . . . .	5.3	7.5	2.2	1.4	9.7	5.8	7.8	8.8	7.4

<sup>1</sup> February 1990 for Japan.

<sup>2</sup> Except for Canada, persons working fewer than 35 hours a week for economic reasons. For Canada, persons working fewer than 30 hours a week.

<sup>3</sup> France has no direct measure for this category. The figure shown is a proxy representing the number of part-time workers who worked their usual hours and sought more work. This understates the true number to the extent

that persons working part time involuntarily did not seek more work.

<sup>4</sup> Included in "reduced hours" for Canada and Sweden. For Japan, some are included in "reduced hours," and an unknown number (probably small) are excluded altogether from the figures on part-time workers for economic reasons.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country.

straints on layoffs, as well as cultural mores, in Europe and Japan have made worksharing a more attractive option than in the United States. For many years, worksharing in European countries has also been encouraged by statutory unemployment insurance or assistance schemes that contain provisions covering payments for partial unemployment. Japan introduced such payments in 1975. By contrast, in the United States and Canada, workers whose hours are cut receive no compensation, except for some workers in a few U.S. States, such as California.<sup>14</sup>

Nonetheless, U.S. employers do resort to reducing employee hours to a significant extent: in 1989, when unemployment averaged 6.5 million, there were an additional 2.4 million workers on reduced hours for economic reasons. They represented almost half of all persons working part time for economic reasons, with the remainder constituting chiefly persons who could find only part-time jobs. (See table 5.)

In Canada, Japan, Sweden, and Western Europe, the bulk of those working part time for economic reasons was persons who could find only part-time work; those on reduced hours (or zero hours) for economic reasons were a much smaller category, accounting for from 6 to 8 percent of all persons working part time for economic reasons in France, Germany, and the Netherlands to about 10 to 13 percent in Sweden and the United Kingdom, 17 percent in Canada, 30 percent in Japan, and 40 percent in Italy.

It may be in the employer's interest to resort to layoffs rather than a reduction in hours, because fringe benefits cost more under a worksharing system. There are few, if any, such costs associated with workers who are let go, especially if they are on temporary work contracts or other nonstandard forms of employment, which proliferated in Europe during the 1980's. The recent dramatic growth in the use of "contingent" workers (part-time, temporary, and subcontracted personnel) is a widespread phenomenon that heralds a changing pattern of employment in Europe and helps to explain the disparity in U-6 rates between Europe and North America.<sup>15</sup>

A recent study provides a guide to the growth of nonstandard employment in Western Europe.<sup>16</sup> The report indicates that employment relationships have changed substantially and diversified considerably in Europe since the late 1970's. Work forces have become more flexible, with more workers employed on fixed-term contracts, on temporary work contracts (through temporary agencies), and in part-time work and other nonstandard forms of work. Although also growing in the United States in the last decade, such flexibility of the work force was already well established in the Nation prior to the 1980's.

In some countries—notably, France—there has been a large increase in the numbers of workers on fixed-term contracts and workers employed by temporary employment agencies. Employers there are not restrained by legal requirements from letting such workers go. While "regular" part-time workers who work a substantial number of hours weekly appear to have secure jobs, part-time employment of a few hours per week offers little or no job security. Therefore, employers have turned more toward the preceding forms of labor flexibility, while probably resorting less to reducing the hours of permanent workers, during economic downturns.

Another factor in the move toward nonstandard forms of employment in Western Europe was the unusually high unemployment that occurred there during the late 1970's and early 1980's. Many workers became more disposed to accept atypical employment as an alternative to unemployment. At the same time, national governments, in attempts to decrease unemployment levels and stimulate job growth, tended to remove or modify employment legislation regulating the use of nonstandard forms of employment. Also, the weakened position of trade unions made them less able to resist the spread of these forms of work.<sup>17</sup> Finally, the widespread decline of employment in manufacturing and the expansion of the service sector have played their part in the growth of atypical employment, as temporary workers and workers willing to do other nonstandard forms of employment are more common in the service sector.

Some national data are available separately for two of the major classes of nonstandard work: temporary work contracts under which the worker is employed by an agency and fixed-term contracts between employer and employee for a definite period of time. Temporary work contracts became well established in France, the Netherlands, and the United Kingdom during the 1980's. In France, the annual number of such contracts doubled, from 2 million to 4 million, between 1979 and 1987.<sup>18</sup> The 1987 figure was equivalent to almost 200,000 full-time jobs; by 1989, the full-time equivalent had risen to 280,000, about 1.5 percent of all full-time jobs in France.<sup>19</sup> Temporary contracts also expanded significantly in Germany, especially at the end of the 1980's. In the Netherlands, the number of workers on temporary work contracts rose steadily, from 25,000 in 1982 to more than 90,000 in 1988.<sup>20</sup> By contrast, temporary work contracts were practically nonexistent in Italy and Sweden, where profit-making employment placement agencies are banned by legislation.<sup>21</sup>

Fixed-term contracts, concluded directly between the employer and the employee, rose very sharply in France, almost doubling between 1985 and 1989, and accounting for 3.4 percent of all

employees in the latter year. Lesser increases occurred in Germany, Italy, and the United Kingdom since 1985, but each of these countries had more than 5 percent of its employees under fixed-term contracts by 1989.<sup>22</sup> In Germany, the 1985 Employment Promotion Act made it easier for companies to take on new workers through fixed-term contracts. A study of the Act suggests that fixed-term contracts accounted for almost 50 percent of new hires in 1986.<sup>23</sup>

There is evidence that in France and Germany, persons on fixed-term contracts were increasingly becoming unemployed. In France, fixed-term and temporary work contracts together accounted for 47 percent of all new cases of unemployment in 1987, compared with 31 percent in 1979, the increase being entirely attributable to the rise in the number of fixed-term contracts.<sup>24</sup> Similarly, a study shows that in Germany in 1987, 18 percent of persons whose fixed-term contracts ended became unemployed, with the proportion rising steadily during the 1980's.<sup>25</sup> In contrast, some fixed-term contracts are renewed for another fixed term, while others are converted to a permanent contract at the end of the employment term.

Thus, in at least some of the European Community countries, higher unemployment in the 1980's was associated with employers resorting less to placing workers on reduced hours and more to letting atypical workers go. As temporary and fixed-contract workers flowed into unemployment or moved out of the labor force, regular workers under contract were shielded both from losing their jobs and from losing hours of work.

#### **Including discouraged workers (U-7)**

U-7 is the most comprehensive rate in the BLS series, bringing into consideration not only those working part time for economic reasons, but also discouraged workers. Discouraged workers are defined as persons without work who want a job, but who are not looking for work because they believe that their search will be unsuccessful. They are discouraged from seeking a job either because they believe that no jobs are available or because they believe that they do not have the requisite qualifications to obtain a job. They can be considered part of the "hidden" labor supply, but they are not included in the labor force, as conventionally measured.<sup>26</sup>

Determining the number of discouraged workers involves subjective phenomena. Results are quite sensitive to the questions posed. Intercountry comparisons should be viewed with caution because the methods and the questions asked vary from country to country.

In the U.S. survey, persons who are neither

employed nor counted as unemployed are asked whether they want a regular job now. Those who answer "yes" or "maybe, it depends" are asked why they are not looking for work. Those who respond that they believe no work is available or that they could not find any work are classified as discouraged due to job market factors. Those who respond that they lacked the necessary schooling, training, or skills, that employers thought they were too old or too young, or that they had a personal handicap (such as a language problem) are classified as discouraged due to personal factors. The sum of both groups—the one citing job market factors and the other citing personal factors—represents the total of discouraged workers. There is no actual test of whether the discouraged worker is currently available for work, but the fact that the person responds that he or she wants a job *now* would indicate the person's availability for work. As discussed in the appendix, other countries have different questions and methods of determining the number of discouraged workers, and these differences have an unknown effect on the comparisons.

The inclusion of discouraged workers brought the largest increases, by far, in the U-7 rates for Italy and Japan. Some comments are necessary, however, to promote understanding of the data for these two countries and the reasons for the large increases shown. Although the appendix discusses comparability issues in some detail, it is important to note here that the discouraged worker concepts for Japan and Italy are somewhat more broadly defined than those for the other countries.

For both Japan and Italy, the Bureau has added persons to the discouraged workers count who may not necessarily be discouraged, according to the preceding definition; nevertheless, they have been included in U-7 because they stand somewhere between unemployment and discouragement. In this way, U-7 for Japan and Italy provides a more comprehensive coverage of labor slack than does U-5, from which these individuals have been left out.

For Japan, 2 million persons responded in the February 1990 special survey that they were available for work, but were not seeking it because there was "no prospect of finding a job." These individuals would have made up 3.2 percent of the labor force, had they been in it. They are clearly discouraged in the sense of the foregoing definition. Another 1.2 million were not seeking work for the same reason, but they either could not take up, or were undecided about taking up, a job now. An unknown portion of this group would also come within the scope of the U.S. definition of a discouraged worker, because the U.S. method includes persons who respond "maybe" as to whether they want a job now.

There is also a third group in Japan: those reported as unemployed in the Japanese survey, but who did not seek work in the past month. These persons, amounting to 360,000 in February 1990, were excluded from U-5. They were not asked any questions as to why they were not seeking work, because they were already classified as unemployed in the survey. (Only persons not in the labor force were asked the questions that led to the response "no prospect of finding a job.") Thus, some of them may have been truly discouraged, but others may have simply been awaiting the results of previous job applications. The Bureau's compromise solution for calculating U-7 for Japan was to take the midpoint between the definitely discouraged (2 million) and the broader count including the two additional groups (3.6 million). In the analysis that follows, the midpoint figure is presented, along with the figure derived from the narrow definition of discouraged workers, which encompasses only the 2 million persons clearly identified as discouraged.

For Italy, the total number of persons reported as not seeking work because they believed that no jobs were available was 621,000 in 1989. To this number, the Bureau has added 833,000 persons who said they were seeking work, but who did not take any active steps in the past 30 days. These individuals were excluded from U-5 under the U.S. definition, which requires active seeking of work in the past 4 weeks. Some may well have been discouraged, but many were also simply awaiting the response to previous job applications or were registered at an Employment Office but had not checked on their prospects within the past month. The Italian survey classifies all of these persons as unemployed. Again, under U.S. definitions, they were somewhere between unemployed and discouraged, and the Bureau has chosen to add them to the U-7 figure. Because of this distinction, similar to that for Japan, the Italian data that follow are also presented in terms of the narrow definition of discouraged workers, so that the impact of the distinction may be assessed.

With the preceding considerations in mind, the proportion of discouraged workers in the labor force varied widely across countries. (Recall that no data were available for Germany.) The following tabulation shows the proportion of discouraged workers as a percent of the labor force plus the number of discouraged workers and the proportion of unemployed persons as a percent of the labor force (the proportion of discouraged workers according to the narrow definition of the term is given for Japan and Italy in parentheses after the figure derived from the broader definition):

	<i>Discouraged</i>	<i>Unemployed</i>
United States . . . . .	0.7	5.3
Canada . . . . .	.5	7.5
Japan . . . . .	4.4 (3.2)	2.2
Sweden . . . . .	.4	1.4
European Community:		
France . . . . .	.2	9.7
Italy . . . . .	6.1 (2.7)	7.8
Netherlands . . . . .	.7	8.8
United Kingdom . . . . .	.5	7.4

Whether a narrow or broad definition is used, Japan and Italy were the countries with the largest contingents of discouraged workers. In Italy, discouraged workers accounted for about 6 percent of the work force plus discouraged workers, but the figure would have been only 2.7 percent on the narrow definition. In Japan, 4.4 percent of the combined work force plus discouraged workers were discouraged, or 3.2 percent narrowly defined. No other country had a proportion of discouraged workers above 1 percent.

France, with only 0.2 percent of its work force in the discouraged category, had the smallest proportion. However, France just began measuring discouraged workers in 1990, and the figure for that year has been used here to estimate the 1989 proportions. Because of the newness of France in this field, it is better not to make much of its low figure, especially in view of the country's high jobless rate, as conventionally defined.

The United States and the Netherlands had 0.7 percent of their work forces in the discouraged group. Canada, Sweden, and the United Kingdom were a bit lower still. Another way to view the figures is to look at them in terms of the percent distribution of the sum of workers who are discouraged and workers who are unemployed, as shown in the following tabulation (the proportion of discouraged workers according to the narrow definition of the term is given for Japan and Italy in parentheses after the figure derived from the broader definition):

	<i>Discouraged</i>	<i>Unemployed</i>
United States . . . . .	12	88
Canada . . . . .	6	94
Japan . . . . .	67 (60)	33 (40)
Sweden . . . . .	21	79
European Community:		
France . . . . .	2	98
Italy . . . . .	45 (26)	55 (74)
Netherlands . . . . .	8	92
United Kingdom . . . . .	7	93

In this comparison, Japan and Italy also had higher proportions of discouraged workers than the rest of the countries had. However, Sweden

emerged as a country with high discouragement, compared with its very low level of unemployment. The United States still maintained a much lower proportion of discouraged workers than Sweden, Japan, or Italy.

In all of the countries studied, U-7 rates were significantly higher for women than for men. (See table 1.) The increase from U-5 to U-7 was also larger for women. This result is consistent with much research which shows that unemployed women are more likely to leave the labor force than are unemployed men.<sup>27</sup>

At 12.3 percent, Japan's U-7 rate for women was particularly high, given that country's U-5 measure of only 2.8 percent for women. The large contingent of discouraged Japanese women reflects the high numbers of women who are temporary or casual workers and who withdraw from the labor force, rather than becoming unemployed when they lose their jobs. Because of these non-regular women workers, Japanese employers have flexibility in their work force during economic downturns, enabling regular workers, predominantly men, in large Japanese enterprises to be virtually assured of employment until they retire, under Japan's "lifetime employment" system.

### **Adding labor market programs in Sweden**

Sweden is generally regarded as the pioneer of so-called active labor market policies. These policies are highly developed and provide a comprehensive system of institutions for retraining and relief work for the unemployed. They also provide for sheltered workshops and other aids for the handicapped. Most other countries also have job training or job creation programs, but relative expenditures on such programs and the numbers of people involved are far lower than in Sweden.<sup>28</sup>

Sweden is unique in that it has deliberately employed its adult training programs as an economic instrument for countercyclical purposes, expanding them rapidly whenever demand slackens. Thus, the training courses in Sweden are used as a form of public works for the unemployed, as well as a means of upgrading the skills of the labor force. They have been an important factor in holding Swedish unemployment rates down.<sup>29</sup>

A special unemployment rate can be constructed to take into account Sweden's labor market measures, which absorb a substantial number of potentially unemployed persons. In 1989, when the unemployed in Sweden totaled 66,000, there were, on average, more than 145,000 persons in the labor market programs. Without these programs, most of these individuals would probably have been either unemployed or discouraged workers who had withdrawn from the labor force. Sweden's U-5 rate of 1.4 percent in 1989 would

have tripled to 4.5 percent if all of these persons had been unemployed. Adding these people to the U-7 rate would have increased it from 3.8 percent to 7.3 percent in 1989. Still, even a figure of 7.3 percent in 1989 would have ranked Sweden virtually tied with Japan for the lowest among the countries studied, but the rate would have been much closer to the U.S. U-7 rate of 7.9 percent.

### **Other aspects of unemployment**

Unemployment figures are used by many persons for different purposes. The U-5 figure is used most frequently to assess current conditions in the labor market; that is, it serves as a cyclical indicator of the relationship between the supply of and the demand for labor. As such, it involves no value judgments regarding a person's relative need for work.

Judgments as to what constitutes hardship vary greatly, from the very narrow to the quite broad. As a group, U-1 through U-7 provides insights into some aspects of economic hardship (unemployment of long duration, for example), but does not contain a complete indicator of the phenomenon. Indeed, the definition of hardship itself varies greatly among different analysts.<sup>30</sup> Some view it in terms of the adequacy of the three basic elements—food, clothing, and shelter—while others consider it in terms of relative standing in the distribution of income. Hardship can take the form of working full time, but at a substandard wage. Any measure of employment and earnings inadequacy is subject to judgments as to what an adequate income level is.<sup>31</sup> Labor force surveys are generally not designed to measure economic hardship specifically. Special studies of income adequacy and poverty levels are required to measure the phenomenon, and such investigations are beyond the scope of this article.

Broader measures of underutilization of available labor resources could also encompass a variety of situations not covered by U-6 and U-7. Public policies can cushion the U-5 unemployment rate by diverting labor slack into channels other than overt unemployment, part-time work, or discouragement with the labor market. The case of Sweden is a prime example. The Swedish programs encourage people to withdraw from the labor force and enter training programs, or they provide jobs for people who otherwise would have been unemployed. In addition, countries may have policies to promote early retirement, to retain young people in education and training, or to encourage ill unemployed workers to apply for disability benefits.

Nearly all European countries instituted early retirement schemes during the 1970's, usually as a means of combating rapidly rising unemployment

by making jobs available to younger persons.<sup>32</sup> Prolonging regular training periods has been used in Germany, while absorbing a portion of the unemployed through disability-related schemes is important in the Netherlands.<sup>33</sup> Government policies toward foreign labor migrations also have an impact on unemployment rates. Except for the Swedish labor market programs, it is difficult to quantify the effects of these many different government actions on the labor market.

Underutilization can also appear as "disguised" underemployment. A member of the labor force may be at work, but may be used so ineffectually, that he or she contributes little to the value of national output. Unlike involuntary part-time workers, these persons do not suffer from reduced hours. Rather, they are a form of "labor hoarding" by an employer who judges it more productive to let them come to "work," instead of dismissing them. In Japan, disguised underemployment occurs for cultural reasons: employers feel paternalistic toward their regular workers and keep them on the full-time payroll, even if there is not enough work to do. Such disguised underemployment is recognized by the International Labour Office as falling beyond conventional statistical measurement.<sup>34</sup>

### Conclusion

The series U-1 through U-7 of alternative unemployment indicators takes the focus away from a single measure of unemployment to a more bal-

anced view of international labor market comparisons. For 1989, these indicators revealed significant differences among countries that would not be evident if one examined just U-5, the conventional unemployment rate. Among the varying definitions of unemployment, joblessness of long duration was found to be much more prevalent in Europe than in North America, but North America was seen to have more job losers, reflecting the lower level of job security in the United States and Canada, compared with Europe and Japan. When the definition was broadened, Sweden and Japan, the countries with the lowest U-5 rates, incurred the largest proportionate increases, with the Japanese U-7 rate approaching the comparably defined U.S. rate. In these two countries, labor slack moved much more into involuntary part time employment and discouragement with the labor market than into open unemployment. If Sweden's active labor market programs had not been in effect, that country's U-7 rate might also have approached the U.S. level.

One limitation to this study is that the data presented are for only 1 year, 1989 (1990 for Japan). Since the indicators have large cyclical components, the international relationships may change, depending on the phase of the business cycle in each country. The Bureau intends to create a data base of the indicators U-1 through U-7 back to 1983 and also to update the figures to cover more current years, so that the changing international relationships may be studied over a wide span of time. □

### Footnotes

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<sup>1</sup> For example, see Joyanna Moy, "An analysis of unemployment and other labor market indicators in 10 countries," *Monthly Labor Review*, April 1988, pp. 39-50.

<sup>2</sup> The framework embodying U-1 through U-7 was introduced in Julius Shiskin, "Employment and unemployment: the doughnut or the hole?" *Monthly Labor Review*, February 1976, pp. 3-10. Since that time, the seven indicators for the United States have been published each month in Table A-7 of the news release, *Employment Situation*.

<sup>3</sup> See Constance Sorrentino, "The Uses of the European Community Labor Force Surveys for International Unem-

ployment Comparisons," in Statistical Office of the European Communities, *The Community Labour Force Survey in the 1990s*, proceedings of a seminar held in Luxembourg, October 1987 (Luxembourg: Office for Official Publications of the European Communities, 1988), pp. 171-97. Some refinements to the adjustments used in that study have been made in the current article, but these have little effect on the basic relationships shown for 1984.

<sup>4</sup> Shiskin, "Employment and unemployment," pp. 4-5.

<sup>5</sup> The definition of U-5 was most recently reviewed by the National Commission on Employment and Unemployment Statistics (Levitan Commission). See U.S. Department of Labor, *Final Report of the Secretary of Labor on the Recommendations of the National Commission on Employment and Unemployment Statistics* (Washington, Department of Labor, October 1981). This report is summarized in Robert L. Stein, "National Commission recommends changes in labor force statistics," *Monthly Labor Review*, April 1980, pp. 11-21.

<sup>6</sup> *International Comparisons of Unemployment*, Bulletin 1979 (Bureau of Labor Statistics, 1978), Chapter 5, pp. 48-68.

<sup>7</sup> Janet L. Norwood, "Labor market contrasts: United States and Europe," *Monthly Labor Review*, August 1983, pp. 3-7.

<sup>8</sup> Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1991, pp. 204-8.

<sup>9</sup> Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1983, p. 63.

<sup>10</sup> Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1991, p. 206.

<sup>11</sup> *Ibid.*, p. 222.

<sup>12</sup> *Ibid.*, p. 46.

<sup>13</sup> For further information on the statistical treatment of laid-off workers, see Joyanna Moy and Constance Sorrentino, "Unemployment, labor force trends, and layoff practices in 10 countries," *Monthly Labor Review*, December 1981, pp. 3-13, especially pp. 8-11.

<sup>14</sup> Moy and Sorrentino, "Practices in 10 countries," p. 9.

<sup>15</sup> For a study of this phenomenon in the United States, see Richard S. Belous, *The Contingent Economy: The Growth of the Temporary, Part-time and Subcontracted Workforce* (Washington, National Planning Association, 1989.)

<sup>16</sup> Industrial Relations Services, *Non-standard forms of employment in Europe*, Report No. 3 (London, European Industrial Relations Review, 1990). See also Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1991, pp. 44-53.

<sup>17</sup> For a discussion of trends in union membership in major industrial countries, see Clara Chang and Constance Sorrentino, "Union membership statistics in 12 countries," *Monthly Labor Review*, December 1991, pp. 46-53.

<sup>18</sup> See Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1991, p. 48.

<sup>19</sup> Industrial Relations Services, *Non-standard forms of employment*, pp. 44-45.

<sup>20</sup> Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1991, p. 48.

<sup>21</sup> *Ibid.*, p. 218.

<sup>22</sup> Industrial Relations Services, *Non-standard forms of employment*, p. 28.

<sup>23</sup> Income Data Services, *European Report*, No. 301, Nov. 3, 1987, p. III.

<sup>24</sup> Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1991, p. 51.

<sup>25</sup> *Ibid.*

<sup>26</sup> There have been periodic debates in the United States about whether discouraged workers should be explicitly included in the count of the unemployed. For example, see National Commission on Employment and Unemployment Statistics, *Concepts and Data Needs, Counting the Labor Force, Appendix, Volume 1* (Washington, U.S. Government Printing Office, 1979), pp. 193-244.

<sup>27</sup> Organization for Economic Co-operation and Development, *Employment Outlook*, September 1987, p. 144.

<sup>28</sup> According to figures collected by the Organisation for Economic Co-operation and Development, Sweden spends 1.58 percent of its gross domestic product on active labor market programs; by contrast, Germany spends 1.02 percent and the United States 0.25 percent of gross domestic product on such programs. See Organisation for Economic Co-operation and Development, *Employment Outlook*, July 1991, pp. 237-49.

<sup>29</sup> *International Comparisons of Unemployment*, pp. 33-34. See also Guy Standing, *Unemployment and labour market flexibility: Sweden* (Geneva, International Labour Office, 1988), pp. 97-124.

<sup>30</sup> See Shiskin, "Employment and unemployment," p. 4.

<sup>31</sup> For a discussion of an index of employment and earnings inadequacy termed the "subemployment" measure, see Sar Levitan and R. Taggart, "Employment and earnings inadequacy: A measure of welfare," *Monthly Labor Review*, October 1973, pp. 19-27.

<sup>32</sup> *International Comparisons of Unemployment*, p. 60.

<sup>33</sup> See Chris de Neubourg, *Unemployment, Labour Slack and Labour Market Accounting: Theory, Measurement and Policy* (Groningen, the Netherlands, Rijksuniversiteit, 1987), p. 89.

<sup>34</sup> De Neubourg, *Unemployment*, p. 85.

## APPENDIX: Sources, methods, and definitions

The usefulness of the measures U-1 through U-7 for international comparisons depends upon the comparability of data collection methods and concepts across countries. National definitions of unemployment and the labor force vary, and adjustments must sometimes be made to enhance international comparability. Since 1962, the Bureau of Labor Statistics has conducted an ongoing program in which foreign unemployment statistics are adjusted to approximate U.S. concepts.<sup>1</sup> Until this study was begun, these adjustments related mainly to U-5, the conventional unemployment rate. Detailed information on the methods of adjustment have been published in a BLS bulletin,<sup>2</sup> subsequent supplements to this bulletin, and articles in the *Monthly Labor Review*.

An initial international comparison of alternative unemployment indicators was prepared for the Statistical Office of the European Communities in 1987.<sup>3</sup> This study presented comparisons of U-1 through U-7 among and within nine European Community countries, the United States, Canada, and Japan for 1984. Sweden and the Netherlands were not covered, and the methods of adjustment were not as refined as in the current study. In addition, some work has been published on comparisons of U-6 and U-7 between the United States and Japan.<sup>4</sup>

*Data sources.* All of the data used in this article are derived from labor force surveys. Annual average data obtained from monthly surveys are used for the United States, Canada, and Sweden. For Japan, the data are from a special labor force survey conducted in February 1990. This survey was used to construct the alternative indicators because it provides much more detailed information on the status of the labor force than the regular monthly surveys do. A February 1989 survey was available for Japan, but the data were not used here because the Emperor's funeral was held during the week of the survey. This caused unusual fluctuations in the 1989 data on persons working reduced hours, as well as in measures of the part-time and full-time labor force. Accordingly, to present a more typical set of indicators for Japan, the February 1990 survey was used instead.

The figures for the European Community countries were obtained from the Community Labour Force Surveys conducted in the spring of 1989. The Statistical Office of the European Communities (EUROSTAT) oversees, compiles, and publishes the Community surveys.

The spring European Community surveys are good indicators of annual averages for the year 1989, at least for the conventional U-5 rate. For Japan, February is

associated with some seasonality, because March is the end of both the school year and the fiscal year. A great deal of Japan's job turnover occurs in March and April, but some begins to take place in February, slightly elevating the conventional unemployment rate for that month, in comparison with the annual average. For Japan, some components of U-1 through U-7 may be slightly overstated because February data, rather than annual data, had to be used. In particular, the youth unemployment rates, analyzed in comparison with the adult rates given by U-4, are probably overstated.

Although the European Community surveys are subject to common concepts and definitions, there is no common survey questionnaire, and the wording and ordering of questions vary from country to country. The Community's linguistic and cultural diversity would pose problems for any standard questionnaire. Therefore, there are some differences in the surveys across countries; however, the differences are minimized by close cooperation between the various national statistical offices and EUROSTAT.

Some adjustments were made by the Bureau to the Community labor force survey data for greater comparability with U.S. concepts. Most of these adjustments were minor, such as excluding from the labor force career military personnel living in private households. However, for Italy, the Bureau has made some significant adjustments to the EUROSTAT figures on unemployment, employees working part time for economic reasons, and discouraged workers, for better comparability with U.S. definitions. These adjustments are summarized below.

The following discussion recapitulates the major points relating to U-5, the conventional definition of unemployment, because it is the base rate from which the other six indicators are derived by additions or subtractions of various groups. The main issues relating to these six indicators are then presented. A more detailed account of the discrepancies among the definitions used by each country and the adjustments made to account for these differences is available upon request.

*The conventional definition (U-5).* In this article, U-5 represents unemployment as a percent of the civilian labor force. Therefore, career military personnel have been omitted from the labor force in the countries that include them, that is, most of the European countries and Japan.

The International Labour Office definition of unemployment, as amended in 1982, sets three separate criteria for classification as unemployed. With certain exceptions, unemployed persons must be (1) without work; (2) currently available for work during the reference period; and (3) seeking work, that is, must have taken specific steps in quest of a job during a specified recent period. Exceptions to (3) are allowed for persons waiting to begin a new job and for some persons on temporary layoff, namely, those with a strong attachment to their former jobs (as indicated by a specific recall date or continued receipt of wages or a salary); those with a weak attachment to their job are to be classified as unemployed.

The U.S. and Canadian surveys follow the International Labour Office guidelines on unemployment, and both use 4 weeks as the specified period of jobseeking

required for classification as unemployed. Sweden changed to a standard of 4 weeks also, in 1987.

The European Community surveys follow the first International Labour Office criterion; however, differences in the EUROSTAT interpretation of the second and third criteria cause the surveys to diverge somewhat from the International Labour Office definition.

As regards the second criterion, relating to current availability, the European Community surveys require that an unemployed person be able to start work within 2 weeks of the reference week. This is not in strict accord with the International Labour Office guidelines, which require availability specifically during the reference period.

Concerning the third criterion, which requires that the individual seek work during a specified recent period, EUROSTAT uses the 4-week specification in the European Community surveys. However, EUROSTAT allows four exceptions beyond the two permitted under the International Labour Office guidelines. The following persons are counted as unemployed, without any inquiry into their job search in the previous 4 weeks:

1. Persons registered or claiming benefits at an official employment exchange;
2. Persons on a register at a private employment office;
3. Persons awaiting the results of a competition for recruitment in the public sector;
4. Persons seeking self-employment.

No adjustment was made to the EUROSTAT surveys to account for these divergences, except for Italy; therefore, the unemployment figures for the European Community countries are overstated somewhat in comparison with the corresponding figures for the non-European Community countries. The overstatement is believed to be minor in all cases except Italy, where a substantial number of persons reported as unemployed do not take active steps to find work within the previous month. This is because the Italian system does not require monthly appearance at the employment office. Registrations may remain valid for a period of about 60 days, or even longer in some provinces in which there is a shortage of personnel in the employment offices. Also, in Italy, numerous individuals spend a considerable amount of time awaiting the results of public sector recruitment competitions.<sup>5</sup>

EUROSTAT's reported Italian unemployment rate of 11.1 percent in April 1989 has been adjusted downward to 7.8 percent for closer comparability with U.S. concepts. The adjustment is based upon detailed data on the time of the last job search from the Italian national survey for April 1989. These data indicate that about one-third of those reported as unemployed did not seek work in the previous 30 days. These "inactive unemployed" have been treated as discouraged workers and allocated to U-7.

Sweden diverges from the International Labour Office in its treatment of full-time students seeking part-time jobs during the school term. Such students, even if currently available for work, are classified as not in the labor force. An adjustment has been made in this article to include them among the unemployed. Because data on these students are not readily available every year, the Bureau has not made this adjustment to the Swedish

figures in its regular unemployment comparisons program. In any event, the effect is very small: the 1989 Swedish unemployment rate (U-5) was increased from 1.3 percent to 1.4 percent by adding 5,000 students to the unemployed and to the labor force.

Japan's regular monthly survey questionnaire differs greatly from both the EUROSTAT survey and other Western models. Current availability in the reference week is required, but no job search period, such as "the past 4 weeks," is specified. The Bureau has used the results of a special survey conducted in February 1990 to adjust the Japanese figures as closely as possible to the U.S. definition. Adjustments were made to omit persons who did not actively seek work in the previous 4 weeks and to include persons who were not working and who actively sought work in the previous 4 weeks, but who were not classified as unemployed. Although each of these adjustments is quite large, on balance, they tend to cancel each other for both sexes combined. However, male unemployment rates are overstated and female rates understated by the regular survey.<sup>6</sup>

Persons on temporary layoff who are awaiting recall to their jobs are classified as unemployed in the United States and Canada. European and Japanese layoff practices are quite different in nature from those in North America; therefore, strict application of the U.S. definition has not been made on this point. In general, persons on layoff are classified as employed in Europe and Japan, because they are employed under work contracts. They regard themselves as having a job, they often remain on the payroll, and they are virtually certain to be recalled to their jobs. In Europe and Japan, employers tend to adopt the practice of reducing workers' hours, rather than laying off workers outright. However, there are a small number of persons whose layoffs take the form of zero hours worked during the reference week.<sup>7</sup> For Europe and Japan, these workers are included in U-6 as persons working part time for economic reasons. In the calculation of U-6, they are given full weight, whereas those working reduced hours are given half weight.

*Treatment of unknowns.* Nonresponse to a survey question is a source of nonsampling error. Some countries compensate for nonresponses by deriving a suitable response based on other information collected in the survey, such as information on respondents with similar characteristics. In the U.S. Current Population Survey, all nonresponses are handled in this fashion, and no groups of unknowns are reported in the data used in this analysis. In the other countries examined, however, some data elements contain a reported group of unknowns. In some cases, these were due to nonresponses; in other cases, certain groups were not asked the relevant questions. For example, the data on U-1 for most of the European Community countries and Sweden include some nonresponses to the question on duration of unemployment; on the other hand, persons seeking self-employment were not asked whether they sought full-time or part-time work. In general, these unknowns (usually a small number) have been distributed by the Bureau according to the proportions derived from the respondents. There may be some error associated with this method, but it should have virtually no impact on the comparisons.

As mentioned earlier, the overall EUROSTAT unemployment data for Italy include a significant number of "inactive" jobseekers whom the Bureau excludes from U-5 for comparability with U.S. definitions. EUROSTAT was able to provide the Bureau with unpublished distributions of data for Italy that included persons who reported that they had sought work in the previous 30 days. However, there were a significant number of unknowns, amounting to 20 percent of the unemployed (after adjustment), who were unaccounted for by the EUROSTAT figures. Most were persons seeking self-employment, an unusually large group in Italy. They were not questioned about when they engaged in their last job search, even though the International Labor Office guidelines state that such persons should be actively seeking a job, engaging in such actions as looking for a place of business or equipment, arranging financing, and applying for business licenses. These unknowns were allocated among U-1 through U-7 according to the EUROSTAT distributions relating to persons who sought work in the past 30 days.

For Japan, data on duration of unemployment and job losers are available only for the reported, rather than adjusted, number of unemployed persons. The Bureau has allocated the adjusted number of unemployed to categories of duration and of former status according to the proportions derived from those reported as unemployed. To the extent that this group is not representative of the distribution of the adjusted number of unemployed, there will be an error associated with the technique. Because Japanese unemployment is so low, any such error would not significantly affect the rankings of U-1 and U-2.

*Proxies.* In a few instances, data are not reported for the exact grouping desired, and proxies have been used in their place. For example, France has no direct measure of persons working part time because they could not find full-time work. The proxy used is the number of part-time workers who worked their usual hours and sought more work. This proxy understates the true number to the extent that persons working part time involuntarily did not seek more work.

*Full-time and part-time employment.* Full-time employment is a component in the calculations of U-4, U-6, and U-7. In the United States, full-time employment includes the following categories: (1) persons who worked 35 hours or more during the survey week; (2) persons who worked fewer than 35 hours for other than economic reasons (for example, because they were on vacation or were ill), but who usually worked 35 hours or more; (3) persons who were not at work, but who usually worked 35 hours or more; and (4) persons who worked fewer than 35 hours for economic reasons, regardless of their usual status. The rationale for including the last group among those employed full time is that although they are working part time, presumably, they desire full-time work. Those working part time consist of all persons who worked fewer than 35 hours and who usually work fewer than 35 hours for noneconomic reasons.

In the European Community countries, Canada, and Sweden, data on part-time and full-time employment are reported according to whether the individual usu-

ally worked part-time or full-time. Therefore, persons who worked part time for economic reasons and who usually work part time are included among part-time workers. An adjustment is made to include these persons in the full-time labor force, for comparability with the U.S. concept.

The European Community surveys do not specify a cutoff in the number of hours worked to be classified as a full-time versus a part-time employee. Rather, full-time or part-time status is recorded according to the respondent's own designation. To provide data that conform more closely to U.S. concepts, the figures have been adjusted to a 35-hour cutoff, based on published information on distributions of hours.

Canada diverges from the practices used in other countries with regard to who counts as a full-time worker. In Canada, a full-time employee is a person who usually works 30 or more hours per week, or a person who usually works fewer than 30 hours per week, but considers him- or herself to be employed full time. (An airline pilot would be in the latter category.) A part-time employee would then be anyone else who usually works fewer than 30 hours per week. No adjustment was made to increase Canada's cutoff to 35 hours. However, Statistics Canada provided unpublished data on the number of full-time workers usually working fewer than 30 hours, and these persons have been reclassified as part-time workers.

*Persons working part time for economic reasons.* The number of persons in this category enters into the calculations of U-4, U-6, and U-7. In the United States, the following reasons are regarded as economic reasons: (1) slack work; (2) material shortages or repairs to plant and equipment; (3) started a new job during the week; (4) terminated a job during the week; (5) could only find part-time work. Data for other countries could usually be found in a similar form. As indicated earlier, in all countries except the United States and Canada, persons on full layoff and, therefore, working zero hours for economic reasons are included among persons working part time for economic reasons. In the calculation of U-6, the persons on zero hours are given full rather than half weight, because they did no work at all in the reference week. Such persons are included in U-5 in the United States and Canada as persons on temporary layoff.

Data for the European Community countries, Canada, and Sweden are published in terms of persons working reduced hours, regardless of the total number of hours worked. Therefore, some persons who worked reduced hours, but still worked 35 hours or more (30 hours or more in Canada), are included in the original data as persons working part time for economic reasons. The Bureau obtained unpublished tabulations from EUROSTAT, Statistics Canada, and Statistics Sweden in order to omit such persons from the count of those working part time for economic reasons.

For Germany, the number of persons working reduced or zero hours (20,000) for economic reasons (as defined in this study) seems low, compared with administrative data on *kurzarbeiter*, or workers receiving short-term compensation. In April 1989, the month of the European Community survey, there were 200,000 *kurzarbeiter*. However, this is the cumulative total of

all persons receiving short-term compensation over the course of the month; therefore, it should be higher than a figure for 1 survey week. Furthermore, the *kurzarbeiter* include persons working more than 35 hours who were on reduced hours, and they also include persons on reduced hours due to labor disputes and bad weather, which are not regarded as economic reasons in this study.

The Italian Statistical Office informed the Bureau that persons working part time for economic reasons might respond to the relevant survey question in either of two ways listed on the survey questionnaire: reduced economic activity of the firm for technical or economic reasons; or lack of work opportunities, seasonal slack, and the like. The difference between these two replies is not always clear to the respondents. Those responding in the manner of the second response were not included in the EUROSTAT tabulations of persons on slack work. The Bureau has adjusted the EUROSTAT data upward, based on the Italian Statistical Office's recommendation to include them. Their inclusion raises the proportion of the labor force in Italy working part time for economic reasons from 2.6 percent to 3.3 percent.

*Discouraged workers.* U-7 brings into consideration the number of discouraged workers. In the United States, these are persons who want a job now, but are not looking because they believe that they would be unsuccessful if they did look for a job.

Measuring the number of discouraged workers is a difficult task because it involves the measurement of subjective phenomena—specifically, one's desire for work and one's perceptions of the chances of finding a job. These are essentially states of mind, rather than criteria that can be objectively determined. Measuring discouraged workers is very sensitive to the wording of the questions and the degree of probing involved in the interview.

The United States, Canada, and Sweden all have concepts signifying discouragement with the labor market. Japan and the European Community countries do not. However, in both the Japanese special survey and the European Community survey, questions are asked of persons who are not in the labor force as to why they are not seeking work, and a figure for discouraged workers can be estimated from these responses. For the European Community countries, 1989 data on discouraged workers are not available for France and Germany. Data for France were collected in 1990 and are used to estimate a figure for 1989. Germany is excluded altogether from the analysis of U-7.

In the United States and Canada, there is more precision to the questioning concerning discouragement with the labor market than there is in the other countries studied. In the U.S. Current Population Survey, the questioning procedure is careful to determine first whether the person wants a job now; those who respond "yes" or "maybe, it depends" are then asked why they are not looking for work. Respondents are never asked directly whether they believe that they can find work, and their current availability for work is not tested.

With regard to discouraged workers, Canada has the stipulation that they must have looked for work in the past 6 months, and their current availability for work is tested. Therefore, the Canadian method is more restric-

Table A-1. Coverage and reliability of household surveys used for calculating alternative unemployment indicators, 1989

Country	Number of households in sample	Number of persons in sample	Total households	Sampling ratio (percent)	Origin of sampling frame	Unemployment rate, 1989	One standard error (68-percent confidence)	Two standard errors (95-percent confidence)
United States .....	60,000	115,000	92,830,000	0.07	Population census	5.3	5.25-5.35	5.2-5.4
Canada .....	48,000	100,000	8,200,000	.6	Population census	7.5	7.4-7.6	7.3-7.7
Japan <sup>1</sup> .....	42,000	100,000	40,100,000	.1	Population census	2.3	2.2-2.4	2.1-2.5
Sweden .....	( <sup>2</sup> )	18,000	( <sup>2</sup> )	.3	Population register	1.4	1.35-1.45	1.3-1.5
<b>European Community</b>								
France .....	65,472	137,000	21,420,000	.3	Population census	9.6	9.45-9.75	9.3-9.9
Germany .....	95,341	221,000	27,800,000	.3	Population census	5.7	5.58-5.82	5.46-5.94
Italy .....	140,749	( <sup>3</sup> )	20,000,000	.7	Municipal registers	11.1	( <sup>3</sup> )	( <sup>3</sup> )
Netherlands .....	30,467	80,000	5,960,000	.5	Postal register	8.8	8.7-8.9	8.6-9.0
United Kingdom .....	65,274	166,000	22,598,000	.3	Postal register	7.4	7.3-7.5	7.2-7.6

<sup>1</sup> Information relates to February 1990 special survey.

<sup>2</sup> Sweden surveys individuals rather than households.

<sup>3</sup> Not available.

SOURCES: Technical notes to surveys and correspondence with national statistical offices.

tive than that used in the United States and the other countries studied. (The U.S. method will change in 1994, when a job search during the past 12 months will be required for classification as a discouraged worker.)

In Canada, supplemental surveys taken each March indicate that about twice as many discouraged workers would be counted if it were not for the job search criterion used in the regular survey. The Bureau has used the March 1989 supplemental survey to estimate the number of discouraged workers in Canada.

In Sweden, the concept that corresponds to "discouraged worker" is *latent arbetsokande*, or "potentially looking for a job." Falling into this category are persons who wanted work and were available for work in the reference week, but who were not seeking work because of various personal reasons or reasons related to the labor market. One of the reasons listed is "never got around to looking for work." In addition, full-time students who were actively seeking work during the school term are included in the *latent arbetsokande*. Both of these groups have been excluded from the count of discouraged workers in Sweden, for comparability with U.S. concepts. The students have been reclassified as unemployed under the definition U-5, while the people who never got around to looking for work remain outside the labor force.

In the European Community surveys, the option, "belief that work is not available or lack of knowledge of where to get work," is addressed to persons outside the labor force in a question about why they were not looking for work. This simple criterion does not consti-

tute a precisely conceived method of measuring the number of discouraged workers, because the persons outside the labor force are not asked whether they actually want work or are available for work. It is impossible to determine whether the European Community method would result in more or fewer discouraged workers being enumerated than if a U.S. questioning procedure were used. Nevertheless, the EUROSTAT data can be used to provide some broad illustration of the extent of discouragement in the European Community countries. For Italy, the number of discouraged workers enumerated by the European Community survey is augmented by the "inactive" jobseekers eliminated from U-5. This adjustment is discussed fully in the article, and data are presented both including and excluding the "inactive" jobseekers.

The Special Labor Force Surveys of Japan do not allow for a precise calculation of discouraged workers according to U.S. concepts. However, a range can be determined because of the many probing questions asked in these surveys. A discussion of the Japanese data is included in the article.<sup>4</sup>

For purposes of convenience of presentation, the midpoint of the range of discouraged workers has been used for Japan. The range of the U-7 rate is 6.0 percent to 8.4 percent, with the midpoint 7.2 percent. In the discussion of U-7, distinctions are made as to the different categories included among discouraged workers.

*Statistical reliability.* All of the data used in this study are derived from sample surveys of households,

except for Sweden, which surveys individuals. Two types of error are possible in an estimate based on a sample survey: nonsampling error and sampling error. Nonsampling errors arise in surveys from many different sources and may occur at almost every phase of the survey operation. For example, interviewers may misunderstand instructions, respondents may make errors in answering questions, the answers may be entered incorrectly on the questionnaires, and errors may be introduced in the processing and tabulation of the data. All countries attempt to minimize such errors by careful design of questionnaires, intensive training and supervision of interviewers, and a thorough control of the processing system. Countries may also conduct periodic special studies, such as reinterviews of portions of the sample population. In general, the more personal and more subjective an inquiry is, the more likely it is to contain nonsampling errors and the larger those errors will be. Thus, data on discouraged workers would be highly subject to nonsampling error.

Sampling error refers to the error arising from taking a sample, rather than surveying the entire population of interest. In terms of sampling errors, the data used in this article for the United States, Canada, Sweden, and Japan are highly reliable, with small estimated standard errors. For Canada and Sweden, a few data elements that were obtained from unpublished tabulations may be less reliable because of their small size. Nonetheless, even if they had a high sampling error, a small number would not affect the results of the calcu-

lations in a significant way. For the five European Community countries, all published data and virtually all of the unpublished data used in this study were within the statistical confidence limits established by EUROSTAT for reliable data.

Table A-1 shows the significant aspects of coverage and reliability of the labor force surveys used in the current study. The European Community countries have much higher sampling ratios (ratios of the number of households surveyed to total households) because they conduct yearly surveys, whereas the U.S. Current Population Survey is conducted every month, with a smaller sample size relative to total households. The range of the published unemployment rate at one standard error (68-percent confidence level) and two standard errors (95-percent confidence level) is also shown. At two standard errors, there is a 95-percent chance that the true value of the estimate falls within the range given. These standard errors relate only to U-5. Different, and perhaps larger, standard errors could be associated with the other measures. For example, there would be a larger standard error associated with data on discouraged workers for the United States because such data are obtained from only one-fourth of the sample.

Because of the possibility of sampling and non-sampling errors, very small intercountry differences (that is, a few tenths of a percentage point) in the alternative unemployment rates analyzed in this article should be discounted. However, larger differences can be regarded as accurate indicators of international disparities.

### Footnotes to the appendix

<sup>1</sup> See Robert J. Myers and John H. Chandler, "International Comparisons of Unemployment," *Monthly Labor Review*, August 1962, pp. 857-64.

<sup>2</sup> *International Comparisons of Unemployment*, Bulletin 1979 (Bureau of Labor Statistics, 1978).

<sup>3</sup> Constance Sorrentino, "The Uses of the European Community Labor Force Surveys for International Unemployment Comparisons," *The Community Labour Force Survey in the 1990s*, proceedings of a seminar held in Luxembourg, October 1987 (Luxembourg: Office for Official Publications of the European Communities, 1988), pp. 171-97.

<sup>4</sup> See the following *Monthly Labor Review* articles by Constance Sorrentino: "Japan's low unemployment: an in-depth analysis," March 1984, pp. 18-27; "Japanese unemployment: BLS updates its analysis," June 1987, pp. 47-53; and "Adjusted Japanese unemployment rate remains below 3

percent in 1987-88," June 1989, pp. 36-38. Updates of and some revisions to these articles will appear in a forthcoming issue of the *Review*.

<sup>5</sup> For a further discussion of this point, see Chapter 5 of Organisation for Economic Co-operation and Development, *Employment Outlook*, September 1987, pp. 125-138.

<sup>6</sup> For further information on the adjustments, see Sorrentino, "Japan's low unemployment."

<sup>7</sup> Joyanna Moy and Constance Sorrentino discuss the statistical treatment of layoffs in more detail in "Unemployment, labor force trends, and layoff practices in 10 countries," *Monthly Labor Review*, December 1981, pp. 3-13, especially pp. 8-11.

<sup>8</sup> A more detailed description of the Japanese data on discouraged workers is in the appendix to Sorrentino, "Japanese unemployment."